

IN THE UNITED STATES COURT OF FEDERAL CLAIMS

In re DOWNSTREAM ADDICKS AND
BARKER (TEXAS) FLOOD-CONTROL
RESERVOIRS

Sub-Master Docket
No. 17-9002L

Senior Judge Loren A. Smith
(E-Filed June 14, 2019)

THIS DOCUMENT APPLIES TO:

ALL DOWNSTREAM CASES

MOTION FOR SUMMARY JUDGMENT AND MEMORANDUM IN SUPPORT

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PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

Pursuant to Rule 56 of the Rules of this Court, Plaintiffs respectfully request that the Court grant summary judgment in their favor. There are no genuine issues of material fact, and Plaintiffs are entitled to judgment as a matter of law.

**PLAINTIFFS' MEMORANDUM IN SUPPORT OF
MOTION FOR SUMMARY JUDGMENT**

ISSUES PRESENTED

1. Whether the Government's releases of water pursuant to the Induced Surcharge Flood Control Regulation in the Water Control Manual ("induced surcharge releases") effectuated a temporary, *categorical* physical taking of Plaintiffs' property during the time (a) the Government stored water on their properties and (b) Plaintiffs were displaced from their properties.
2. Whether the Government's induced surcharge releases effectuated a temporary, *non-categorical* physical taking during the time Plaintiffs were displaced from their properties.
3. Whether the Government's induced surcharge releases and claims as to future intentions amount to a permanent, non-categorical physical taking in the form of a flowage easement over Plaintiffs' properties.

INTRODUCTION

In the early hours of August 28, 2017, the United States began releasing massive volumes of water from the Addicks and Barker Reservoirs (the "Reservoirs"), causing widespread destruction to the homes and businesses located downstream from the Reservoirs along the Buffalo Bayou, including those belonging to Plaintiffs. Those releases continued for weeks, occupying Plaintiffs' property with, in some cases, many feet of the Government's water. The destruction deprived Plaintiffs of the normal use and enjoyment of their property for months, and required substantial investment by Plaintiffs to restore their homes and businesses to their pre-flood condition. By the Government's own admission, the objective of its action — which it took pursuant to its standard operating procedures for the Reservoirs — was to protect

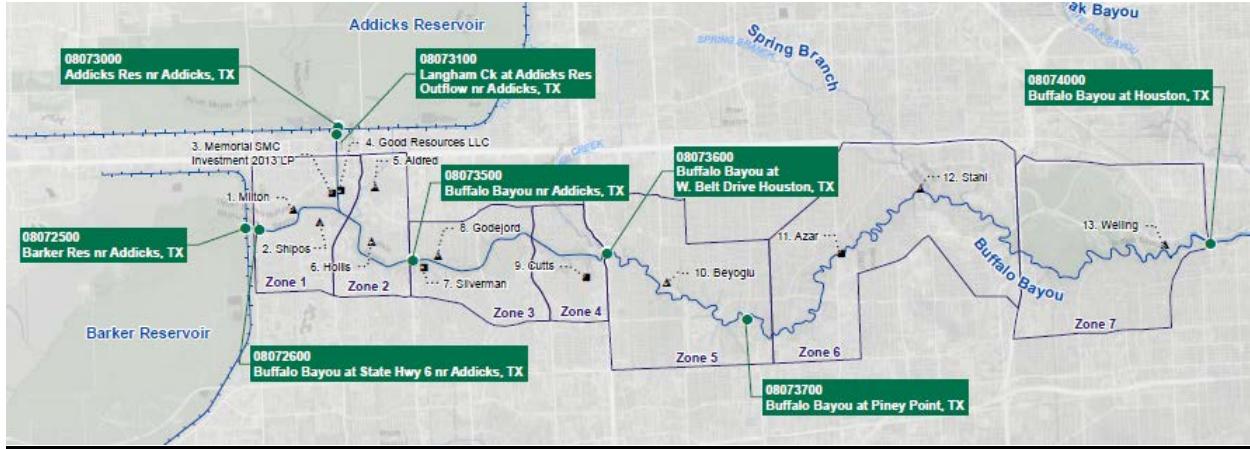
Downtown Houston and the Houston Ship Channel, other neighborhoods (including neighborhoods upstream of the Reservoirs), and the integrity of its Reservoirs. The consequences of that action — the destruction of Plaintiffs' property — was a necessary and foreseen consequence of that decision. “The Takings Clause is ‘designed to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole.’” *Arkansas Game & Fish Comm'n v. United States*, 568 U.S. 23, 31 (2012) (quoting *Armstrong v. United States*, 364 U.S. 40, 49 (1960)). The Government took this action after promising for years that it would not release water at rates that would damage properties along Buffalo Bayou. The Government’s release of water from the Reservoirs, and the destruction that release caused, effectuated a taking under the Fifth Amendment for which Plaintiffs have not received just compensation.

STATEMENT OF UNDISPUTED MATERIAL FACTS

The Plaintiffs

1. Over one thousand individuals have filed suit against the United States in the Downstream sub-docket alleging that the Federal Government took their private property. The Court appointed Lead Counsel to represent the interests of the various Plaintiffs in this case. Lead Counsel and the United States agreed on the selection of 13 Test Properties,² which the Court approved for purposes of establishing liability. *See* ECF 81. The 13 Test Properties present a variety of factual scenarios and are located at different distances from the Reservoirs along Buffalo Bayou, as depicted on the following map:

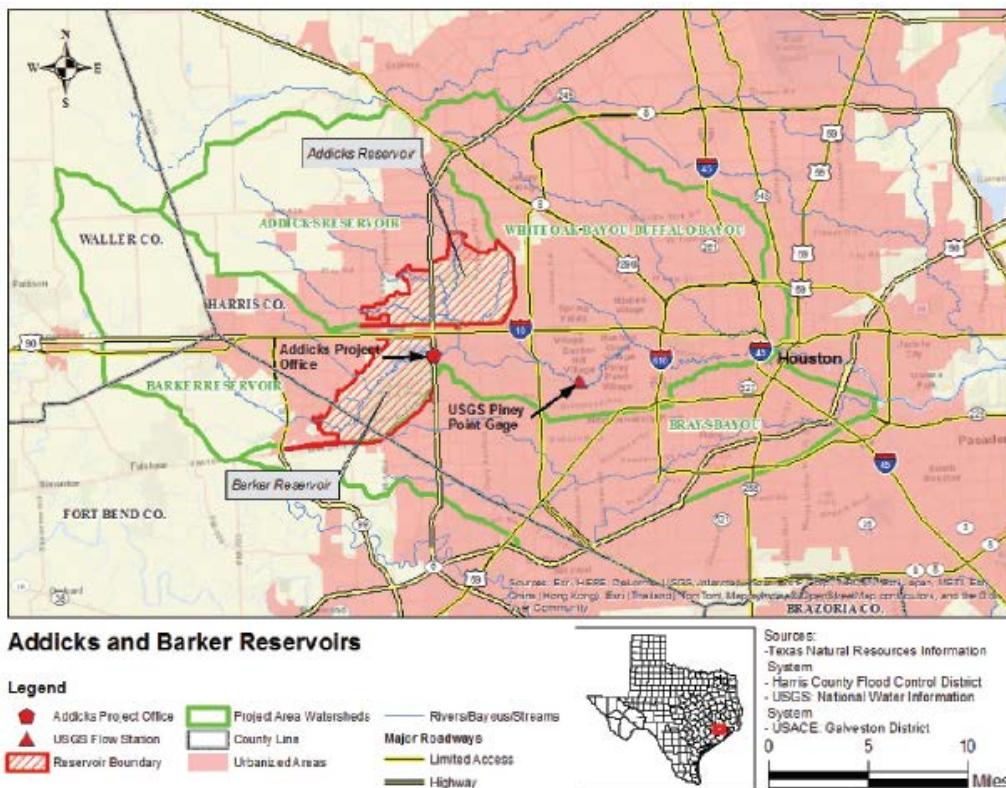
² The parties originally agreed upon 14 Test Property Plaintiffs; however, the case filed by one Test Property Plaintiff (Becky Ho) was dismissed without prejudice. *See* ECF 109.



Bardol Expert Rep. Fig. 3-1 (A1776) (excerpt).

The Addicks And Barker Reservoirs

2. The U.S. Army Corps of Engineers (the “Corps”) constructed the Reservoirs in the 1940s. 2012 Manual at USACE016311 (A22). The Reservoirs were constructed on the west side of Houston in the Buffalo Bayou Watershed and consisted of earthen dams, approximately 11.5 and 13.5 miles in length, respectively:



2014 Emergency Action Plan at USACE019769 (A310).

3. The Reservoirs were intended to protect the City of Houston and the Houston Ship Channel by mitigating flood risk to the areas downstream of the Reservoirs. 2012 Manual at USACE016308 (A19) (explaining Reservoirs provide “flood risk management protection . . . to the City of Houston from flood damages, and prevention of excessive velocities and silt deposits in the Houston Ship Channel Turning Basin”); Zetterstrom Tr. 216:9-17 (A1185) (confirming that “the prescribed water management policy is to use th[e] embankments to hold back runoff to mitigate against damage flood stages for Downtown Houston and the Port of Houston”); Long Tr. 21:4-11 (A1149) (“[T]he operation of the projects w[as] designated for the overall good of the City of Houston . . . [t]o provide flood risk management to the City of Houston” by “help[ing] [t]o limit the impacts of flooding that may occur from a storm event”); *see also* 2009 Draft Op. Assessment at USACE464026 (A168) (“sole authorized purpose . . . to reduce potential flood damage along the downstream reach of Buffalo Bayou”).

4. The Reservoirs impound water and limit the flow of water down the Buffalo Bayou into the City of Houston and the Houston Ship Channel. *See generally* 2012 Manual at USACE016335-36 (A46-A47).

5. Anticipating that a substantial amount of water would be impounded by the Reservoirs during rain events, the Federal Government purchased land immediately upstream of the Reservoirs (“Government Owned Land”). The Government did not make commensurate purchases downstream of land that could be affected by large releases from the Reservoirs. *See* 1979 Corps Mem. re: Spillways at USACE327072, -074 (A2662, A2664) (contemplating acquisition of downstream property but concluding that “estimates of costs for acquisition of

downstream real estate interests necessary to comply with the ER [Engineer Regulation] are astronomical”); *cf.* 1981 Environmental Assessment at USACE012909 (A2605) (upstream).

6. Houston continued to grow after construction of the Reservoirs, including substantial development along Buffalo Bayou downstream of the Reservoirs. 2012 Manual at USACE016313 (A24). As residences and businesses increasingly filled previously vacant land, the Corps sought to modify the Reservoirs to better protect the growing city. *Id.*

7. Originally, the Reservoirs each had one controlled and four uncontrolled outlet conduits. Although the flow of water down the Buffalo Bayou could be reduced, it could not be shut off completely. *Id.* at USACE016335 (A46). To further restrict the release of water downstream, the Corps gated all the conduits in 1963. *Id.* at USACE016313 (A24). As a result, each Reservoir now has an outlet structure with five gated conduits, and the gates can be closed completely or opened to varying degrees to permit water to flow downstream and into the Buffalo Bayou. *Id.* at USACE016308-309 (A19-A20).

8. The Corps also added over-flow auxiliary spillways. *Id.* at USACE016335 (A46). The ends of the dams in each Reservoir now terminate in the auxiliary spillways. *Id.* at USACE016308-309 (A19-A20). The auxiliary spillways are intended to serve as “overflow spillways” during storms greater than the “Standard Project Flood,” up to and including the “Probable Maximum Flood,” although the Government chose not to purchase “flowage easement for end-around flow” for this normal operation of the auxiliary spillways because that land was rural at the time. 2013 Reservoirs Safety Modification Rep. at USACE0066041, -051 (A2202, A2212). The auxiliary spillways are at lower elevations, so that water flows over the auxiliary spillways well before pool elevations reach the high point of the Reservoirs. 2012 Manual at USACE016308-309 (A19-A20).

9. The Reservoirs and spillways were designed based on several possible flooding events and Reservoir pool levels. Email to L. Zetterstrom re: Draining Reservoirs at USACE803622-23 (A189-A190). Addicks Reservoir holds up to approximately 200,000 acre-feet of water, while Barker Reservoir holds up to approximately 210,000 acre-feet of water. *Id.* One acre-foot is nearly 326,000 gallons of water. *See Water Measurement*, Colorado River Water Conservation District, <https://www.coloradoriverdistrict.org/water-measurement/> (last visited June 13, 2019).

Operational History Of The Addicks And Barker Reservoirs Until Tropical Storm Harvey

10. By 1963, the Corps had adopted a Reservoir Regulation Manual, later renamed the Water Control Manual (“Manual”), to guide its operations of the Reservoirs. 1962 Reservoir Regulation Manual at USACE011635 (A200). The Manual describes the Reservoirs, the hydrologic conditions of the surrounding area, the regulations and authority under which the Reservoirs operate, and instructions on operating the Reservoirs in “a manner assuring the accomplishment of the purpose for which they were designed.” *Id.*

11. “Normal Flood Control Regulation” for the Reservoirs consists of keeping the floodgates *closed* during flood events, until releases of water can be made in a manner that does not cause damaging downstream flooding. 2012 Manual at USACE016338 (A49). In other words, the Corps’ practice is to impound stormwater entering the Reservoirs behind the dam structure: “The gates on both reservoirs will be closed when 1 inch of rainfall occurs over the watershed below the reservoirs in 24 hours or less, or when flooding is predicted downstream.” *Id.* The Normal Flood Control Regulation further directs the operator of the Reservoirs to “[k]eep the gates closed and under surveillance as long as necessary to prevent flooding below the dams.” *Id.*

12. Prior to Tropical Storm Harvey (“Harvey”), the Corps acknowledged “operational constraints” for the Reservoirs. The Corps evaluated downstream and upstream flooding risk in light of the Reservoirs’ purpose of preventing downstream flooding, and determined that the Reservoirs should be operated to prevent downstream flooding, even at the cost of flooding properties that had developed upstream of the Reservoirs beyond the Government Owned Land:

The increase in downstream development (and possibly downstream tributary inflow) has contributed to reductions in allowable outflows. ***The dams are operated strictly to prevent downstream flooding; therefore, the gates remain shut even if pool levels increase and flood upstream properties.***

2009 Draft Op. Assessment at USACE464039 (A181) (emphasis added).

13. The Manual contains an “Induced Surcharge Flood Control Regulation,” under which the Reservoir flood control gates are opened, releasing water that was detained in the Reservoirs and inundating downstream properties. 2012 Manual at USACE016339 (A50).

14. The Manual directs the Corps to invoke the Induced Surcharge Flood Control Regulation procedures and to discharge water when certain trigger points are reached. Those trigger points, which are based on both the Reservoir pool elevation and the rate of pool elevation rise, are contained within the Manual, along with the corresponding gate opening instructions. 7/31/18 Thomas Tr. at 140:19-20 (A443);³ 2012 Manual at USACE016435-436, -439 (A146-A147, A150); Mem. for Record at USACE020350-351 (A285-A286); 2014 Emergency Action Plan at USACE019883-885 (A424-A426).

15. For both Reservoirs, induced surcharge operations are triggered at Reservoir pool elevations several feet below the lowest elevations of the ends of the auxiliary spillways (108

³ Robert Thomas, Chief of Engineering and Construction Division at the Galveston Division, was the Corps’ designated 30(b)(6) witness to testify regarding “[p]olicies for releases of water from the reservoirs from 2012 through the present.” Thomas Resp. to Notice of Dep. at 6 (A1190A).

feet at the north auxiliary spillway of the Addicks Reservoir, and 104 feet for both Barker Reservoir auxiliary spillways). 2012 Manual at USACE016308-309 (A19-A20).

The Corps Models And Predicts The Impact Of Releasing Significant Quantities Of Water Into The Buffalo Bayou

16. From at least the 1960s, the Corps regularly analyzed which flow rates in the downstream Buffalo Bayou channel would result in damaging flooding to private property. *Id.* at USACE016313-315 (A24-A26). In particular, the various revisions of the Manual require that normal operation of the Reservoirs limit discharges so that the combined flow in the Buffalo Bayou from all sources (including runoff and releases from the Reservoirs) stays at a non-damaging level, also known as “non-damaging channel capacity.” *E.g.*, 1962 Reservoir Regulation Manual at USACE011657-658 (A222-A223).

17. Using hydrologic modelling and observed data, the Corps regularly re-calculates the non-damaging channel capacity as a result of changes in the channel and surrounding areas. *Id.* at USACE011658 (A223) (“[E]mptying releases . . . will be subject to future change if the channel capacity . . . is increased . . . or if project operations prove the maximum non-damaging channel capacity to be at a lower discharge rate.”). In 1963, the Corps estimated the non-damaging channel capacity at 6,000 cubic feet per second (“cfs”). 2012 Manual at USACE016313 (A24). But by 2012 the Manual limited the combined Buffalo Bayou flow from runoff and releases to 2,000 cfs. *Id.* at USACE016315 (A26).

18. From 2011 to 2014, the Corps created constant flow maps that modeled downstream Buffalo Bayou inundation under different flow rate assumptions. *Id.* at USACE016425-431 (A136-A142); 2014 Emergency Action Plan at USACE019785-790 (A326-A331). These maps show the areas that would be inundated at flow rates of 3,000 cfs, 6,000 cfs,

10,000 cfs, 15,000 cfs, and 20,000 cfs. *E.g.*, 2014 Emergency Action Plan at USACE019786 (A327) (“Buffalo Bayou Constant Flow Area Map”).

19. In 2016, the Corps explicitly acknowledged that downstream properties along the Buffalo Bayou would suffer flood damage at flow rates greater than 3,000 cfs:

Using USACE surveys of 1st floor elevation data, it was determined that the lower level of homes in the vicinity of the West Beltway Bridge (approximately 6.5 miles downstream of the reservoirs) experience flooding at discharges in Buffalo Bayou of 4,100 cfs. This data is consistent with complaints of property inundation typically received by the District at discharges of 3,000 cfs and above. At flows greater than 4,100 cfs, a large percentage of the structures incurring flood damage are located between the bridges over Buffalo Bayou at North Wilcrest Drive (approximately 5 miles downstream of the reservoirs, measured along the streambed) and Chimney Rock Road (approximately 16 miles downstream of the reservoirs).

Mem. for Record at USACE02034 (A282) (emphasis added).

20. At the time of Harvey, the Corps had the capability to use its models to evaluate and to know in advance of opening the flood control gates the full extent of downstream inundation that would likely occur by street, intersection, and block. 9/7/18 Thomas Tr. 547:11-22; 556:3-20 (A453, A456).

21. Consistent with these analyses, the Corps repeatedly emphasized that it would limit the discharge rate to prevent downstream flooding. *See, e.g.*, 1992 Special Flood Hazards Rep. at USACE015077-078 (A2673-A2674) (“The gates will remain closed until downstream conditions permit system releases plus local inflows that remain below the non-damaging capacity”), -085 (A2681) (“The current operating plan limits the discharge rate in order to avoid erosion and flood damages to downstream properties.”); 1984 General Design Mem. at USACE236353 (A2714) (“The current non-damaging capacity of Buffalo Bayou is about 2,000 cfs, and combined discharges from both reservoirs are limited to this flow rate less tributary inflows below the dams.”); 1977 Emergency Seepage Control Ltr. at USACE011987 (A3002);

Ltr. to R. Kirkpatrick at USACE464770 (A3117) (“The gates are kept closed and under surveillance as long as needed to prevent flooding below the reservoirs.”); 2016 Chronicle Article re: Reservoirs (A3332) (“*We will not open the dam to a point where it will cause flooding downstream.*”) (emphasis in original).

Plaintiffs Acquire An Interest In The Test Properties

22. The Test Property Plaintiffs acquired their properties between 1976 and 2015.

See Collected Ownership Docs. (A2029-A2185); Plaintiffs’ Dep. Excerpts re: Property Acquisition (A458-A492). Some of the Test Properties comprised Plaintiffs’ residences, while others were commercial in nature. *Id.* At the time each of the Plaintiffs acquired their property, none of the Plaintiffs were aware of flooding of their property. Plaintiffs’ Dep. Excerpts re: Knowledge of Prior Flooding at Purchase (A493-A527).⁴

23. Of the 13 Test Properties, three properties were located in the 100-year flood zone, eight⁵ properties were located in the 500-year flood zone, and three properties were not located in any flood zone. Plaintiffs’ Fact Sheets (A1036-A1147).

24. Although the vast majority of Plaintiffs were aware of the existence of the Reservoirs, Plaintiffs’ Dep. Excerpts re: Knowledge of Reservoirs (A528-A598), none of the Plaintiffs testified to being aware at the time of purchase that the Government could deliberately release water from those Reservoirs in a manner that would inundate their homes. No Plaintiff testified to any awareness of the Manual, let alone an understanding of its meaning.

⁴ For 12 of the 13 Test Property Plaintiffs, the evidence demonstrates that they did not have knowledge of prior flooding at the time of purchase; for one Test Property Plaintiff, Welling, there is no contrary evidence.

⁵ The Stahl property is partially in the 500-year and 100-year flood zones. *See* Plaintiffs’ Fact Sheets, Stahl Fact Sheet Question 7 (A1136).

25. Following the acquisition of the Test Properties, nine Plaintiffs remained free of flooding for years or even decades leading up to the Government's induced surcharge releases from the Reservoirs. Plaintiffs' Dep. Excerpts re: No Flooding After Purchase (A599-A625); Plaintiffs' Fact Sheets – Question 6 (A1036-A1147). While four Plaintiffs experienced some flooding between acquisition of their Test Properties and Harvey, such flooding was insubstantial, and in any event far less than what was experienced as a result of the Government's induced surcharge releases from the Reservoirs. Plaintiffs' Dep. Excerpts re: Flooding After Purchase (A626-A660); Plaintiffs' Fact Sheets – Question 5-6 (Aldred: inch of water from heavy rain in 2009 (A1037); Azar: a few inches of water in and out (A1040); Silverman: minor water intrusion controllable with towels (A1133); Welling: water seeped into the house from heavy rains (A1146)).

**Tropical Storm Harvey Reaches Houston And
The Corps Begins Induced Surcharge Release Operations**

26. On August 25, 2017, Harvey made landfall along the Texas coast, near Rockport, Texas, as a Category 4 hurricane. Upstream Stipulations of Fact for Trial ¶ 107 (A3134).

27. Within 12 hours of making landfall, Harvey weakened into a Tropical Storm and stalled over the Houston area for four days before moving into Louisiana on August 30, 2017. *Id.* ¶ 108 (A3134). Harvey maintained tropical storm intensity the entire time the storm was inland over southeast Texas. *Id.* (A3134)

28. During the entire period of the storm, the Reservoir watersheds received 32-35 inches of rain — considerably less than the rainfall totals for other parts of the Houston area. Kauffman Email re: Effect of Discharge over 4,000 cfs at USACEII01703363 (A3140).

29. As a result of continued rainfall and rising Reservoir levels, the Corps — for the first time in the history of the Reservoirs — operated the Reservoirs pursuant to the “Induced

Surcharge Flood Control Regulation” in the Water Control Manual, resulting in the release of storm water downstream. 7/31/18 Thomas Tr. 138:18-21 (A443).

30. While the Corps had never previously conducted an “Induced Surcharge,” it was nonetheless a standard, non-emergency procedure. In addition to the Manual, the Corps also has an Emergency Action Plan applicable to the Reservoirs, with contingencies for Level 1, Level 2, and Level 3 emergencies. 2014 Emergency Action Plan at USACE019775-776 (A316-A317). No Level 1, 2, or 3 emergency has *ever* been formally declared in the history of the Reservoirs, including during Harvey. 8/3/18 Thomas Tr. 275:2-11 (A448); *see also* Long Tr. 39:3-14 (A1153). Instead, the Reservoirs — including their release of water — “perform[ed] as expected with no significant problems.” Mem. for Commander at USACE016689 (A1156); *see also* 8/3/18 Thomas Tr. 265:10-20 (A446).

31. On August 27, 2017, the trigger points for the Manual’s induced surcharge release operations for the Addicks and Barker Reservoirs were satisfied. *See* Zetterstrom Tr. 238:15-239:5 (A1187).

32. With the consent of Brigadier General Paul Owen, Colonel Lars Zetterstrom, commander of the Galveston District of the Corps that operates the Reservoirs, authorized the opening of the Reservoir gates, which began no later than 1:00 a.m. on August 28, 2017. *Id.* 11:2-4 (A1176) (agrees it was an authorized act), 32:19-33:10 (A1180) (he is commander), 207:10-208:7 (A1184) (informed Brigadier General Owen of the actions the Corps was going to take); Nairn Downstream Expert Rep. at 16 (A1238) (first phase of releases started by 1:00 a.m. on August 28).⁶

⁶ Dr. Rob Nairn is the Government’s hydrology expert for both the Upstream and Downstream cases. Nairn Downstream Expert Rep. at 1-2 (A1223-A1224).

33. Colonel Zetterstrom testified that the purpose of making induced surcharge releases is to “optimiz[e] storage capacity and ensur[e] the structural stability of the dams,” thereby facilitating the broader stated aims of protecting Downtown Houston and the Houston Ship Channel. Zetterstrom Tr. 27:8-28:21 (A1179) (“These structures continue to perform as they were designed to do, which is to protect against flooding in Downtown Houston and the Houston Ship Channel.”), 27:22-23 (A1179) (noting that preserving the integrity of the structures “allows additional safety to the public”); *see also* Long Tr. 204:21-24 (A1155) (“USACE operates its projects in a manner deliberately and carefully designed *to preserve the structure* and protect life and property.”); Lindner Tr. 11:6-17 (A1746) (Harris County Flood Control District witness confirming “absolutely” that the purpose of induced surcharge releases is “for dam protection and for protection of Downtown Houston and the Ship Channel”). The induced surcharge releases were intended to effectuate that purpose. 7/31/18 Thomas Tr. 137:7-14, 138:3-10 (A442-A443) (“Q. To protect the structures of the dams themselves? A. That's right.”); Long Tr. 12:5-9 (A1148A) (The Corps knew its actions were “making people hurt downstream,” but found that harm justified by the public benefit of “ensur[ing] the integrity of the dam and operat[ing] the reservoirs for the entire population.”). Based on its prior modeling, the Corps was aware that its decision would inundate the downstream properties. Long Tr. 202:18-204:16 (A1155); *see also* Zetterstrom Tr. 30:11-13 (A1180) (“It was understood that if we did the controlled releases in surcharge conditions, that there would potentially be impacts downstream.”).

34. The Corps’ actions were also intended to protect other neighborhoods surrounding the Reservoirs. Zetterstrom Tr. 19:11-20:4 (A1178) (“If we don’t begin releasing now [August 28, 2017] the volume of uncontrolled water around the dams will be higher and have a greater

impact on the surrounding communities,” including “communities around the northern end of the dam.”), 15:8-23 (A1177) (acknowledging that, if the gates had remained closed, “water would have spilled out around the ends of the dam and gone into different neighborhoods” and that “it’s going to be better to release the water . . . directly into [the] Buffalo Bayou as opposed to letting it go around the ends and through additional neighborhoods and then ultimately into the bayous”); *see also* Aug. 27, 2017 Corps Press Release (A3141); Zetterstrom Tr. 156:18-157:20 (A1182) (acknowledging that opening the gates and flooding downstream properties provided “indirect benefits” to properties near the north end of [the] Addicks Reservoir that would have experienced uncontrolled water around the spillways, even though the spillways were designed for overflow in this situation); Long NPR Interview at 2 (A3143) (“[W]e had to make the difficult decision to begin releasing the water from the reservoirs so that we could achieve a balance that was necessary to continue operating, *protect as many homes as we could downstream, while protecting the integrity of the dam.*”) (emphasis added); 2017 Corps Ann. Rep. re: Galveston Water Control at USACE869494 (A3158) (noting “impacts to local neighborhoods upstream of the reservoirs and uncontrolled flows at the north end of the auxiliary spillway” and asserting that conditions “warranted initiation of surcharge operations”); Lindner Tr. 36:6-37:13 (A1747) (confirming that if the Reservoir gates “had never been opened” “there would have been more water that flowed into the Spring Valley area” and that engineering consultant “modeling showed that much of th[e] area would be inundated with water”); *see also* Kauffman Email re: Forecasts at USACE810313 (A3169) (describing goal of “get[ting] water out of upstream homes faster”); Thomas Email re: Recommendations on Reservoir Ops. at USACE803952 (A3172) (continuing induced surcharges to limit water flowing over auxiliary

spillways); Thomas Email re: Plan to Release at USACE805927 (A3173) (discussing releasing more water and flooding downstream homes to prevent upstream and side-stream flooding).

35. Plaintiffs downstream of the Reservoirs did not receive meaningful advance warning of the Government's releases. *See, e.g.*, Lindner Tr. 253:3-24 (A1750) (Harris County not aware of scope of releases until near midnight on August 27 and would have alerted downstream property owners if it had known earlier); Flanagan Tr. 35:21-37:9 (A3183) (emergency manager for city of Houston didn't know about releases until late at night on August 27 or early in the morning on August 28).

36. The Government "ramped up" releases from the Reservoirs during two periods — the first on August 28 between 1:00 a.m. and 8:00 a.m., reaching a total estimated combined discharge of 6,000 cfs, and the second on August 29 between 7:00 a.m. and 3:00 p.m., resulting in a combined discharge of approximately 13,000 cfs. Nairn Downstream Expert Rep. at 30 (A1252). The Government conducted these "maximum gate release[s]" even though "rainfall intensities were relatively low" or nonexistent. *Id.* at 30-31 (A1252-A1253) (noting "there was very little to no rainfall").

**The Corps' Induced Surcharge Release Operations During Harvey
Caused Damaging Downstream Flooding**

37. The result of the induced surcharge releases was a massive influx of water into the Buffalo Bayou. *Id.* at 16-17 (A1238-A1239) (around 13,000 cfs combined discharge beginning August 29, 2017). In the immediate aftermath of the Corps opening the gates, the water discharged from the Reservoirs caused a substantial increase in flooding in the downstream areas where Plaintiffs live and work. Measurements at Dairy Ashford showed that the rate of flow in

the Buffalo Bayou rose rapidly from 8,380 cfs to 14,900 cfs.⁷ Corps' Buffalo Bayou Flow Analysis (A1195-A1196).

38. As rainfall from Harvey ceased, the discharge of water from the Reservoirs quickly became the sole source of water in the Buffalo Bayou. *Id.* at 3 (A1196) (100% at Dairy Ashford starting August 29, 2017); *see* Nairn Downstream Expert Rep. at 31 (A1253) (“[F]low through lower Buffalo Bayou was primarily due to the release from Addicks and Barker Reservoirs” and a uniform flow did not resume until September 5, 2017 — that is, “at least 6 days after the rain stopped.”). The water flowing through the Buffalo Bayou (and beyond its banks), generated from the Reservoir discharges alone, was more than sufficient to flood Plaintiffs’ properties. Nairn Downstream Expert Rep. at 108 (A1330) (summary of model showing flooding for most Test Properties extending past August 29, 2017).

Plaintiffs’ Homes Are Inundated As A Result Of The Induced Surcharge Releases

39. The inundation of Plaintiffs’ homes, located downstream from the Reservoirs along the Buffalo Bayou, began hours after the induced surcharge release operations began.⁸ *Id.* at 127-140 (A1349-A1362) (charts showing timing of inundation of Test Property Plaintiffs).

40. For seven Test Property Plaintiffs, water levels eventually reached three feet or more above the first floor of their homes, including two properties with maximum depths over eight feet. *Id.* at 108 (A1330); Plaintiffs’ Dep. Excerpts re: Height of Floodwater (A661-A695);

⁷ These measurements were conducted by the Corps following the conclusion of Harvey. Corps’ Buffalo Bayou Flow Analysis (A1194-A1195).

⁸ The time from release to inundation varied for each Plaintiff, as they are located different distances from the Reservoirs. Under normal circumstances, it can take many hours for water to travel from the Reservoirs down the Buffalo Bayou until reaching the location on the Buffalo Bayou adjacent to the more distant Plaintiffs’ properties. Corps’ Buffalo Bayou Flow Analysis at USACE006809 (A1194) (“[N]ormally flows will take 3-4 hours to reach West Belt and 8 hours to reach Piney Point.”).

Plaintiffs' Fact Sheets – Question 5 (A1036-A1147). Four Test Property Plaintiffs experienced water levels between one and three feet, and two Test Property Plaintiffs experienced water levels of less than one foot. *Id.*

41. Although a small number of Plaintiffs may have experienced some water in or around their homes or businesses prior to the Corps' induced surcharge release operation, such flooding was insubstantial, particularly in comparison to the flooding that resulted from the induced surcharge release. Nairn Downstream Expert Rep. at 127 (A1349) (minor flooding for Aldred), 137 (A1359) (minor flooding for Beyoglu);⁹ Plaintiffs' Fact Sheets (A1059-A1060) (Memorial SMC reported a few inches of flooding prior to release, escalating to several feet afterward); *see also* Plaintiffs' Dep. Excerpts re: Pre-Release Flooding (A967-A1035).

42. People had to be evacuated from at least nine of the Test Properties as a result of the encroaching inundation, some under harrowing circumstances. *See, e.g.*, Plaintiffs' Dep. Excerpts re: Evacuation (A696-A716) (the Hollises evacuated by catamaran on August 28, 2017 (A711); one tenant evacuated from Good Resources property by raft on August 29, 2017 (A709); the Miltons evacuated by boat on August 28, 2017) (A714)); Britton Decl. (A3185) (boat rescues from Memorial SMC on August 29, 2017).

43. Plaintiffs' properties remained inundated for many days, with some Plaintiffs unable to gain access to their property at all for two weeks. *See, e.g.*, Plaintiffs' Dep. Excerpts re: Inaccessibility (A717-A742) (Good Resources property inaccessible until September 10th (A725-A726); water in Milton home until September 10, 2017 (A732, A735); water mostly

⁹ For Test Property Plaintiffs Azar and Welling there is a dispute of fact as to whether the flooding prior to the Government's induced surcharge release was substantial. *Compare* Nairn Downstream Expert Rep. charts at 138 (A1360) (Azar), at 140 (A1362) (Welling) *with* Bardol Expert Rep. at 7-52, 7-53 (A1824-A1825) (Azar), at 7-54 (A1826) (Welling).

receded from Hollis property by September 9, 2017 (A728); water cleared Cutts home around September 7, 2017 (A723)); Britton Decl. (A3261) (Memorial SMC property inaccessible until September 11th); *see also* Nairn Downstream Expert Rep. at 108 (A1330) (summary of model showing duration of up to 12 days).

44. The inundation resulted in substantial destruction to Plaintiffs' homes, businesses, and the personal property contained thereon. Many of Plaintiffs' properties suffered hundreds of thousands of dollars in damages. Plaintiffs' Dep. Excerpts re: Damage to Test Properties (A743-A883) (\$100,000 for the "band-aid" repair for Welling (A883); cost of repair for Hollis will probably exceed \$400,000 (A802); cost to repair at least \$105,000 for Aldred (A774); Good Resources already spent \$80,000 on repairs with additional repairs ongoing (A779-A780)); Britton Decl. (A3185) (Memorial SMC estimates its repairs to cost \$17 million). The scale and duration of the inundation also destroyed most or all of Plaintiffs' personal property stored on the first floor of their homes, and in many instances destroyed their vehicles and other improvements, such as garages. *See, e.g.*, Plaintiffs' Dep. Excerpts re: Damage to Test Properties (A743-A883) (Miltons' personal property floating in water and sewage (A810-A811); Welling lost art and equipment (A877-A878); the Beyoglus lost everything below one foot on first floor (A756)).

45. As a result of the destruction caused by the inundation, Plaintiffs remained unable to use or enjoy their property as normal for many months. For those Plaintiffs whose homes were severely damaged, many could not return until well into 2018; some were unable to return to their homes for much longer. Plaintiffs' Dep. Excerpts re: Exclusion from Ordinary Use (A884-A966) (Miltons were still displaced at deposition, hoping to return in August 2018 (A936); Hollis family still residing with son as of July 2018 (A926); Cutts could not move back

until May 2018 (A907)). Plaintiffs whose property functioned as a business similarly found themselves unable to reopen their businesses for months. *E.g.* Plaintiffs' Dep. Excerpts re: Exclusion from Ordinary Use (Memorial SMC only partially reopened in December 2017 and remained mostly vacant as of February 2018 (A928-930)); (Good Resources did not receive rental income on 3 of 4 units from September to December 2017 (A921A)). At the time of their depositions in the summer of 2018, at least three Plaintiffs were still unable to resume ordinary use and enjoyment of their property. Plaintiffs' Dep. Excerpts re: Exclusion from Ordinary Use (Milton (A936), Azar (A890-A891), Hollis (A926)).

46. The Government's opening of the Reservoir gates either directly caused, or substantially worsened, the inundation the Plaintiffs experienced. According to the Government's own experts, for at least *eight* of the Test Properties, flooding would not have occurred but for the Government's use of induced surcharge operations and release of around 13,000 cfs of water from the Reservoirs. Nairn Downstream Expert Rep. at 16-17 (A1238-A1239) (table showing release summary). The Government's hydrological expert, Dr. Nairn, modeled the actual flooding during Harvey as well as several other alternative models, including a "gates closed" model that demonstrates what would have happened if the dam gates had stayed closed during Harvey. Nairn Upstream Expert Rep. at 92-93 (A1585-A1586). The "gates closed" model Dr. Nairn generated concedes that the Cutts, Godejord, Good Resources, LLC, Hollis, Milton, Shipos, Silverman, and Memorial SMC Investment Plaintiffs' properties would not have flooded had the gates remained closed. *Id.* at 159 (A1651) (identifying gates closed model; downstream results not explicitly discussed); Nairn Downstream Gates Closed Model (A1741) (Summary Sheet tab of spreadsheet showing gates closed model results); Bardol Aff. (A1843-A1845) (confirming same based on Government's expert's data). Consistent with that

conclusion, Plaintiffs' experts agree that the Government's release from the Reservoirs was the sole cause of flooding for these eight properties.¹⁰ Bardol Expert Rep. at 7-47 - 7-54 (A1819-A1826).

47. For three of the other five Test Properties, the Government's experts nonetheless concede that the flooding was substantially worse than those Plaintiffs would have experienced had the gates remained closed. *Compare* Nairn Downstream Expert Rep. at 108 (A1330) (summary of modeled level and duration of flooding actually experienced during Harvey),¹¹ *with* Nairn Downstream Gates Closed Model¹² at Summary Tab (A1741) (Aldred: 18 inches actual vs. 4.6 inches gates closed; Beyoglu: 36 inches actual vs. 12.6 inches gates closed; Azar: 11 days duration actual vs. 2 days duration gates closed); Bardol Aff. at 1-2 (A1843-44) (confirming the meaning of the Nairn "Gates Closed Run"); *see also* Bardol Expert Rep. at 7-47 - 7-54 (A1819-A1826) (Aldred: no flooding in gates closed model; Beyoglu: 1.2 feet of additional flooding vs. gates closed model; Azar: 12 additional days of inundation vs. gates closed model; Welling: increased inundation vs. gates closed model).

¹⁰ Memorial SMC reported minor parking lot flooding prior to the releases, and Mr. Bardol concluded that the property experienced a substantial increase in inundation depth and duration as a result of the releases. Bardol Expert Rep. at 7-48 - 7-49 (A1820-A1821).

¹¹ Plaintiffs dispute that the Government's expert's "Actual Harvey" model accurately reflects the levels and duration of inundation experienced by the Plaintiffs. However, for purposes of this Motion, the Government expert's own model indicates that there is no genuine dispute of fact that, had the Government left the gates closed, the majority of Plaintiffs would have remained dry or experienced substantially less severe flooding.

¹² Nairn explains the methodology behind his "Gates Closed Model" in his Upstream Expert Report. *See* Nairn Upstream Expert Rep. at 159 (A1651).

The Corps Plans To Use
The Same Induced Surcharge Procedures During Future Storms

48. The Government has confirmed that “Induced Surcharge” is among the options for normal operation of the Reservoirs, and is part of the applicable Water Control Manual. *Supra ¶¶ 13-15.* The Corps’ designated 30(b)(6) representative testified that the Manual in effect at the time of Harvey remains the most current iteration of the applicable Water Control Manual. 7/31/18 Thomas Tr. 22:5-23:4 (A441).

49. The State of Louisiana’s Climatologist, one of the Government’s experts here, confirmed that “[a] rain event similar to Harvey will inevitably occur in the area of the Barker and Addicks Reservoirs,” and that such an event could occur “next week.” Keim Tr. 75:16-21 (A1743).

50. Members of the Corps testified that, in the event of a similar rainfall event to Harvey, the Corps would take the same course of action. Long Tr. 34:14-35:5 (A1152) (confirming that when a rainfall event like Harvey hits again, the Corps will “inevitably” close and open the gates again); *see also* Lindner Tr. 73: 7-15 (A1748) (HCFCD witness confirming induced surcharge “could happen again”). Indeed, the Corps and Harris County Flood Control District believe preparation exercises are warranted to “talk about surcharge releases, notifications and communications” for similar future events. ABECT Harvey After-Action Meeting Mins. at USACE00738155 (A3178).

51. Recognizing that the Corps will inundate Plaintiffs’ properties in the future, the Corps identified a “need” for “federal funding to buy all of the property in the A&B reservoirs *and in the surcharge corridor*” where Plaintiffs’ properties are located. Email from E. Russo to L. Zetterstrom re: Potential New Legislation at USACE803821 (A3179) (emphasis added); *see also* 1992 Special Flood Hazards Rep. at USACE015085 (A2681) (“The downstream properties

that are at risk for flood or erosion damage [if the discharge rate was increased] could be purchased and removed.”).

52. The Government has not purchased property in the downstream “surcharge corridor,” nor purchased easements on such property.

53. Based both on the Corps’ modeling, *supra ¶¶ 16-21*, and the actual experience from Harvey, *supra ¶¶ 37-47*, Plaintiffs’ properties will be inundated as a result of the Government’s induced surcharge releases in the future.

STANDARD OF REVIEW

Summary judgment is appropriate when the evidence presented indicates that there is “no genuine dispute as to any material fact and that the movant is entitled to judgment as a matter of law.” RCFC 56(a). “A ‘genuine’ dispute is one that ‘may reasonably be resolved in favor of either party,’ and a fact is ‘material’ if it might significantly alter the outcome of the case under the governing law.” *Ansley Walk Condo. Ass’n, Inc. v. United States*, 142 Fed. Cl. 491, 497 (2019) (quoting *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248, 250 (1986)). At summary judgment, the court’s role is not to “weigh the evidence and determine the truth of the matter but to determine whether there is a genuine issue for trial.” *Anderson*, 477 U.S. at 249.

ARGUMENT

The Government’s release of water from the Reservoirs beginning on August 28, 2017, effectuated a taking of Plaintiffs’ property under the Fifth Amendment. “The Takings Clause is ‘designed to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole.’” *Arkansas Game*, 568 U.S. at 31 (quoting *Armstrong*, 364 U.S. at 49). “[W]hen the government physically takes possession of an interest in property for some public purpose, it has a categorical duty to compensate the former owner.” *Id.* (quoting *Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg’l Planning Agency*,

535 U.S. 302, 322 (2002)). “As a principle, the right to control one’s private property is paramount to the existence of our Nation. A government should strive to protect, rather than destroy [real and] personal property.” *Alford v. United States*, 141 Fed. Cl. 421, 425 (2019), *appeal filed*, No. 19-1678 (Fed. Cir. Mar. 21, 2019). In this case, the Government destroyed Plaintiffs’ real and personal property for public benefit without providing just compensation. The Court should grant Plaintiffs’ motion for summary judgment.

I. THE GOVERNMENT TOOK PLAINTIFFS’ PROPERTY

A. The Government Took Plaintiffs’ Property In Three Distinct Ways

As recently articulated by this Court, the conceptual framework for takings analysis depends on the type of taking at issue:

Generally, the government can take property by two means: physically or by regulation. Both types of takings can be further divided into two categories: categorical and non-categorical. Categorical takings deprive the owners of *all* economically viable use of their property. Non-categorical takings, on the other hand, deprive the owner of *some* amount of the economic use of their land, either through physical invasion or onerous regulation. Takings can be either permanent or temporary in duration.

Caquelin v. United States, 140 Fed. Cl. 564, 573 (2018) (Lettow, J.), *appeal filed*, No. 19-1385 (Fed. Cir. Jan. 9, 2019).

Here, the Government released water from the Reservoirs, storing water on Plaintiffs’ land and in their homes and businesses, all for public use. As explained below, the Government’s actions effectuated three of the four kinds of physical takings described in *Caquelin*: a temporary, categorical physical taking; a temporary, non-categorical physical taking; and a permanent, non-categorical physical taking.

Temporary, Categorical Physical Taking. First, the Government effectuated a temporary, categorical physical taking during the period the Government deprived Plaintiffs substantial use and enjoyment of their properties. This taking extended from the time the water

the Government released reached their properties until the time Plaintiffs could resume ordinary use and enjoyment of their homes and businesses. At a minimum, Plaintiffs suffered a *per se* categorical taking for the up to 12 days during which the Government stored water on their properties. *See Statement of Undisputed Material Facts* (hereinafter “SUMF”) ¶ 43.

“[A] temporary categorical physical taking occurs when the government physically seizes the entirety of a landowner’s property for public use but returns it to the original owner after a period of time.” *Caquelin*, 140 Fed. Cl. at 573. In such cases, the duration of the taking is only relevant to the calculation of compensation, “not whether a taking occurred.” *See id.* at 574 (citing *United States v. General Motors Corp.*, 323 U.S. 373, 378 (1945) (“Governmental action short of acquisition of title or occupancy has been held, if its effects are so complete as to deprive the owner of all or most of his interest . . . to amount to a [T]aking.”)).

By storing water on Plaintiffs’ properties, the Government physically seized the entirety of Plaintiffs’ properties and destroyed much of Plaintiffs’ personal property. That is a physical categorical taking. The taking lasted until Plaintiffs could resume the ordinary use and enjoyment of their homes and businesses — that is, many months. *See* SUMF ¶ 45. At the very least, the taking lasted during the time when the Government stored water on Plaintiffs’ properties. *See Arkansas Game*, 568 U.S. at 33 (“[W]here real estate is actually invaded by superinduced additions of water . . . so as to effectually destroy or impair its usefulness, it is a taking, within the meaning of the Constitution.”) (quoting *Pumpelly v. Green Bay Co.*, 80 U.S. (13 Wall.) 166, 181 (1872)) (alteration added).¹³ For up to 12 days after the Government made

¹³ *Pumpelly* involved permanent submergence of the plaintiff’s land, but “[o]rdinarily, temporary governmental action will give rise to a taking if permanent action of the same character would constitute a taking.” *Caquelin*, 140 Fed. Cl. at 576 (citing *Arkansas Game*, 568 U.S. at 26-27).

induced surcharge releases, *see* SUMF ¶ 43, Plaintiffs could not gain access to their properties because their “land was continuously kept under water,” 568 U.S. at 33. By storing water on Plaintiffs’ properties, the Government temporarily took that land away from them and destroyed their personal property. That is a temporary, categorical physical taking.

Temporary, Non-Categorical Physical Taking. *Second*, in addition, and in the alternative,¹⁴ the Government effectuated a temporary, *non-categorical* physical taking of Plaintiffs’ property when it released millions of gallons of water from the Reservoirs and stored that water on Plaintiffs’ property, thereby causing dramatic damage to Plaintiffs’ homes, businesses, and personal property and depriving them use and enjoyment of those homes and businesses for months. “A non-categorical physical taking occurs when the government occupies part of an owner’s property in some manner.” *Caquelin*, 140 Fed. Cl. at 574. This taking extended from the time the water the Government released reached Plaintiffs’ properties until the time Plaintiffs could resume ordinary use and enjoyment of their homes and businesses.

Permanent, Non-Categorical Physical Taking. *Third*, through its actions and claimed intentions, the Government has effectuated a permanent, non-categorical physical taking in the form of a flowage easement. Every time another severe storm creates the triggering conditions listed in the Manual, the Corps will perform induced surcharge release operations, at the expense of Plaintiffs and for the sake of other parts of Houston. Flowage easements “constitute permanent non-categorical physical takings.” *Id.* at 575. A takings claim accrues when the Government takes a permanent flowage easement. *See Kaiser Aetna v. United States*, 444 U.S.

¹⁴ If the Court finds that the first taking — a temporary, *categorical* physical taking — occurred only during the up to 12 days the Government stored water on Plaintiffs’ properties, the Court should find that the Government also engaged in a temporary, non-categorical physical taking covering the further period during which Plaintiffs could not resume ordinary use and enjoyment of their properties.

164, 179-80 (1979) (“[E]ven if the Government physically invades only an easement in property, it must nonetheless pay just compensation.”); *Nollan v. California Coastal Comm’n*, 483 U.S. 825, 831 (1987) (“To say that the appropriation of a public easement across a landowner’s premises does not constitute the taking of a property interest but rather . . . a mere restriction on its use, . . . is to use words in a manner that deprives them of all their ordinary meaning. . . . The right to exclude [others is] one of the most essential sticks in the bundle of rights that are commonly characterized as property.” (quotation omitted)); *Ridge Line, Inc. v. United States*, 346 F.3d 1346, 1353 (Fed. Cir. 2003) (“[G]overnment actions may not impose upon a private landowner a flowage easement without just compensation.”) (citing *United States v. Dickinson*, 331 U.S. 745, 750-51 (1947)). Although a flowage easement does not involve “‘exclusive, or continuous and uninterrupted’” occupation of property, it is still a permanent physical occupation because its “indefiniteness means permanency.” *Caquelin*, 140 Fed. Cl. at 575 (quoting and citing *Handler v. United States*, 952 F.2d 1364, 1376-77 (Fed. Cir. 1991)).

Here, the Government’s decision to make induced surcharge releases during storms demonstrates its ability and intent to flood Plaintiffs’ properties again in the future. The Manual specifies that the Corps conduct induced surcharge releases based on the amount of water in the Reservoirs and the rate of rise. *See* SUMF ¶¶ 13-15, 30, 33. A Government expert confirmed that “[a] rain event similar to Harvey will inevitably occur in the area of the Barker and Addicks Reservoirs” and that this could happen “next week.” SUMF ¶ 49. Therefore, induced surcharge releases “could happen again,” and preparation exercises between the Corps and Harris County Flood Control District are warranted to “talk about surcharge releases, notifications and communications.” SUMF ¶ 50. The Government has not disclaimed its ability to conduct induced surcharge releases in the future. Thus, the Government is functionally claiming a

flowage easement over Plaintiffs' properties. Indeed, on August 30, 2017, *during* Harvey, the Corps identified a "need" for "federal funding to buy all of the property in the A&B reservoirs *and in the surcharge corridor*" where Plaintiffs' properties are located. SUMF ¶ 51. The Corps contemplated this option as far back as 1992. *See id.* The Government, however, has not purchased those properties or paid for a flowage easement. SUMF ¶ 52. If the Government believes it is in the best interest of the public to claim a flowage easement across the Plaintiffs' properties, it may do so. But as the Supreme Court has noted, "if [the Government] wants an easement across [a] property, it must pay for it." *Nollan*, 483 U.S. at 842.

B. Each of the *Arkansas Game* Factors Is Satisfied, Demonstrating that the Government Effectuated Each Taking as a Matter of Law

In *Arkansas Game*, the Supreme Court clarified that government-induced "[f]looding cases, like other takings cases, should be assessed with reference to the 'particular circumstances of each case,' and not by resorting to blanket exclusionary rules." 568 U.S. at 37 (quoting *United States v. Central Eureka Mining Co.*, 357 U.S. 155, 168 (1958)); *see also id.* at 32 (emphasizing that "most takings claims turn on situation-specific factual inquiries"). The Court established several factors for courts to consider in determining whether Government-induced flooding amounts to a taking: (a) the plaintiffs' cognizable property interests; (b) the character of the property and the owners' reasonable investment-backed expectations; (c) causation; (d) intent or foreseeability; and (e) the severity of the interference, including duration of the flooding. *See id.* at 38-40; *see also St. Bernard Par. Gov't v. United States*, 121 Fed. Cl. 687, 719 (2013) (listing factors), *rev'd on other grounds*, 887 F.3d 1354 (Fed. Cir. 2018). The

undisputed facts of this case relating to each of those factors confirm that the Government effectuated a compensable taking.¹⁵

1. Plaintiffs Had Cognizable Property Interests

Plaintiffs possessed protectable property interests at the time of the taking. For purposes of the Fifth Amendment, protectable property interests encompass “every sort of [real property] interest [a] citizen may possess,” *General Motors*, 323 U.S. at 378, as well as personal property, *see Horne v. Department of Agric.*, 135 S. Ct. 2419, 2426 (2015). Critically, “one of the most valued” of those property rights “is the right to sole and exclusive possession — the right to *exclude* strangers, or for that matter friends, but especially the Government.” *Handler*, 952 F.2d at 1371. However, because the Fifth Amendment “protects rather than creates property interests, the existence of a property interest is determined by reference to ‘existing rules or understandings that stem from independent sources such as state law’” and federal law. *Phillips v. Washington Legal Found.*, 524 U.S. 156, 164 (1998) (quoting *Board of Regents of State Colleges v. Roth*, 408 U.S. 564, 577 (1972)).

Under federal law, Plaintiffs have the right not to have the Government store water on their property without just compensation. *See Pumpelly*, 80 U.S. (13 Wall.) at 181 (“[W]here real estate is actually invaded by superinduced additions of water . . . , so as to effectually destroy or impair its usefulness, it is a taking, within the meaning of the Constitution”). And Plaintiffs have the right to be paid for any flowage easement the Government takes over their property. *See Nollan*, 483 U.S. at 842.

¹⁵ To the extent the Court finds that the Government effectuated a temporary, *categorical* physical taking, analysis under the *Arkansas Game* factors is not necessary to determine that compensation is required. *See Caquelin*, 140 Fed. Cl. at 573-74 (“[C]ompensation is mandated when a leasehold is taken and the government occupies the property for its own purposes, even though that use is temporary.”) (quoting *Tahoe-Sierra Pres. Council*, 535 U.S. at 321-23).

While “the issue of what constitutes a ‘taking’ is a ‘federal question’ governed entirely by federal law,” state law can inform the scope of property rights. *Bartz v. United States*, 633 F.2d 571, 677 (Ct. Cl. 1980) (per curiam). The Texas Code defines property broadly, to encompass “any matter or thing capable of private ownership,” real property including “land” and “improvement[s],” and personal property constituting “property that is not real property.” Tex. Tax Code Ann. § 1.04. Texas courts have reaffirmed this broad definition. *See Texas v. Moore Outdoor Props., L.P.*, 416 S.W.3d 237, 242-43 (Tex. App. 2013) (“The term ‘property,’ as it applies to takings law, does not only mean the real estate, but every right which accompanies its ownership.”). Texas case law also confirms that a wide variety of property interests are sufficient to support a takings claim, including ownership in fee simple, *see San Jacinto River Auth. v. Burney*, 570 S.W.3d 820, 835-36 (Tex. App.—Houston 1st Dist. 2018), *reh’g denied* (Mar. 26, 2019); leasehold interests, *see Urban Renewal Agency v. Trammel*, 407 S.W.2d 773, 774 (Tex. 1966); fixtures and improvements located on a plaintiff’s realty, *see Texas v. Carpenter*, 89 S.W.2d 979, 980 (Tex. Comm’n App. 1936); a future reversionary interest, *see El Dorado Land Co., L.P. v. City of McKinney*, 395 S.W.3d 798, 798 (Tex. 2013); a possible future right of reentry to the property, *see id.*; and even an owner’s right of access to their property, *see Westgate, Ltd. v. Texas*, 843 S.W.2d 448, 452 (Tex. 1992).

In this case, there can be no dispute that Plaintiffs possessed cognizable, protectable property rights at the time of the taking. Each of the 13 Test Property Plaintiffs owned their property in fee simple at the time of the taking. *See SUMF ¶ 22*. Each Test Property Plaintiff has also presented evidence that the taking damaged or destroyed their personal property located on or in the vicinity of their real property. *See SUMF ¶ 44*. Test Property Plaintiffs therefore unambiguously possessed cognizable, protectable property rights sufficient to support a takings

claim. *See St. Bernard Par.*, 121 Fed. Cl. at 719 (finding protectable property interests in “property” as defined by Louisiana law).

2. Plaintiffs Had Reasonable Investment-Backed Expectations¹⁶

Plaintiffs had reasonable investment-backed expectations that they would be free to use their properties as residences and businesses free from the Government storing water on their properties. In the context of government-induced flooding, reasonable investment-backed expectations “necessarily must consider knowledge of any prior flooding.” *Id.* A property that has experienced past flooding can still suffer a taking if the government-induced flooding is substantially greater. *See Arkansas Game*, 568 U.S. at 39; *see also Caquelin*, 140 Fed. Cl. at 581 (concluding that a taking can occur when there is a “lack of prior comparable flooding”).

Contributing to the Plaintiffs’ investment-backed expectations is the character of the land. The land at issue is comprised of residential subdivisions and places of commercial business. SUMF ¶ 22. At the time they purchased their properties, none of Test Property Plaintiffs’ properties were aware of any prior flooding. SUMF ¶ 22. For some, this means that they had no

¹⁶ It is not clear whether this “reasonable investment-backed expectations” factor applies to either physical or categorical takings, rather than only to regulatory takings. *See Love Terminal Partners, L.P. v. United States*, 889 F.3d 1331, 1345 (Fed. Cir. 2018), *petition for cert. filed*, No. 18-1062 (U.S. Feb. 13, 2019) (considering factor in a regulatory takings case). In *Arkansas Game*, the Supreme Court suggested that “reasonable, investment-backed expectations” is a “relevant” factor in determining whether a “regulation or temporary physical invasion by government [that] interferes with private property” amounts to a taking. 568 U.S. at 38-39. But the Federal Circuit had previously held that in both categorical and physical takings cases, “the property owner is entitled to a recovery without regard to consideration of investment-backed expectations” and that such expectations “are not a proper part of the analysis.” *Palm Beach Isles Assoc. v. United States*, 231 F.3d 1354, 1364 (Fed. Cir. 2000); *see also Preseault v. United States*, 100 F.3d 1525, 1540 (Fed. Cir. 1996) (rejecting Government’s “attempt to read the concept of ‘reasonable expectations’ as used in regulatory takings law into the analysis of a physical occupation”). This Court need not determine the extent to which that Federal Circuit precedent remains good law after *Arkansas Game*, because, as explained *infra*, Test Property Plaintiffs undeniably possessed reasonable, investment-backed expectations that the Government would not deliberately flood their property.

reason to believe their properties had flooded at any point over the previous several decades.

SUMF ¶ 22. Although several of the properties lay in a designated flood plain, SUMF ¶ 23, that fact is irrelevant given the absence of prior flooding. *See Arkansas Game*, 568 U.S. at 39 (even where a property “lies in floodplain below a dam, and had experienced flooding in the past,” flooding that is more severe, and not “comparable” to prior flooding, can give rise to a takings claim).

To the extent that any of the properties had suffered flooding *after* the Test Property Plaintiffs’ acquisition of the property, such flooding is irrelevant to the question of Plaintiffs’ expectations at the time they invested in the property. *Cf. Love Terminal*, 889 F.3d at 1345 (explaining that the “reasonable, investment-backed expectation analysis is designed to account for property owners’ expectation . . . at the time of their acquisition”). In any event, only four of the properties had experienced post-acquisition flooding, and any such was minimal. *See* SUMF ¶ 25. None of the Test Properties suffered prior flooding that was in any way “comparable” to the flooding resulting from the taking. *Compare* SUMF ¶ 25, *with* SUMF ¶¶ 39-47.

Also contributing to the Plaintiffs’ investment-backed expectations is that the Government had never previously operated the Reservoirs using the “Induced Surcharge Flood Control Regulation” section of the Manual and had repeatedly stated that releases would be managed to prevent downstream flooding. SUMF ¶¶ 11-15, 21, 29. Plaintiffs’ reasonable, investment-backed expectations rightly incorporated the existence and purpose of the Reservoirs, as well as their operation prior to Plaintiffs’ acquisition of their property. *Cf. Love Terminal*, 889 F.3d at 1345; SUMF ¶ 24. The Government’s action in using the induced surcharge procedures also represented a dramatic shift from the over 60-year history of the Corps operating the gates to

maintain a non-damaging flow in the Buffalo Bayou downstream of the Reservoirs. *See* SUMF ¶¶ 11-12, 21. It therefore would have been *unreasonable* for Plaintiffs to assume that such an action was likely, or even possible, when purchasing their property.¹⁷ In short, based on the information available to them at the time of purchase, Plaintiffs had a reasonable, investment-backed expectation, based on decades of historical precedent, that the Government would not deliberately flood their property.

3. *The Government's Actions Caused Flooding on Plaintiffs' Properties*

The Government caused the flooding of Plaintiffs' properties by opening the gates and releasing water from the Reservoirs. The Government opened the Reservoir gates beginning early on August 28, 2017. SUMF ¶ 29, 31-32. It was this action, not the storm itself, that caused the flooding of Plaintiffs' properties, and the consequent taking. But for the Government opening the gates, Plaintiffs would have suffered no flooding, or substantially less flooding, of their properties. SUMF ¶ 38 (showing that, no later than August 29, 2017, all of the water in the Buffalo Bayou, and thus all of the water inundating Plaintiffs' property, was water discharged from the Reservoirs); *see also* SUMF ¶ 46. The Government's own experts concede that *eight* of the Test Property Plaintiffs would have experienced *no flooding* but for the releases. SUMF ¶ 46.

Although three properties had suffered minimal flooding at the time the Government opened the gates (Aldred, Beyoglu, and Memorial SMC), SUMF ¶ 41, those Plaintiffs'

¹⁷ No evidence adduced in this case suggests that any Plaintiff was aware of the Manual, let alone the "Induced Surcharge Flood Control Regulation" section that led to the release of water in this case. *See* SUMF ¶ 24. Nor would the reasonable property owner under this objective analysis be charged with knowledge of either the Manual or the potential impact that such a procedure would have on the property such that the owner could have accounted for the risk of Government-induced flooding in making the decision to invest in the property. *See, e.g., Murr v. Wisconsin*, 137 S. Ct. 1933, 1945 (2017).

properties “had not been exposed to flooding comparable to the [flooding caused by the Government’s induced surcharge releases] in any other time span either prior to or after [the Government’s induced surcharge releases].” *Arkansas Game*, 568 U.S. at 39. Thus, “the flooding caused by the [Government’s induced surcharge releases] contrasted markedly with historical flooding patterns.” *Id.* at 29. Any pre-release flooding was insignificant when compared to the flooding experienced following the releases.

For all the Test Property Plaintiffs, the inundation wrought considerable destruction on the homes or businesses located on the property, in many cases necessitating hundreds of thousands of dollars in repairs. SUMF ¶ 44. The inundation also destroyed countless pieces of personal property stored on the first floor of Plaintiffs’ properties. *Id.* That this inundation was caused by the Government’s releases is further confirmed by the Corps’ own flow modeling, which demonstrates that from at least August 29, 2017, 100% of the flows through the Buffalo Bayou — from which the water inundated Plaintiffs’ properties — were the product of the induced surcharge releases. SUMF ¶ 38. There is no dispute that, absent the Government’s action, Plaintiffs would have suffered no or substantially less flooding. *See St. Bernard Par. v. United States*, 887 F.3d 1354, 1362 (Fed. Cir. 2018), *cert. denied*, 139 S. Ct. 796 (2019)

Plaintiffs have thus established a causal link between the invasion (the flooding of their properties) and the authorized Government act (the opening of the gates) — that the alleged injury would not have occurred but for the Government’s action. *See Moden v. United States*, 404 F.3d 1335, 1343 (Fed. Cir. 2005). The evidence also shows “what would have occurred if the government had not acted.” *St. Bernard Par. v. United States*, 887 F.3d at 1362 (internal

quotations omitted). Namely, Plaintiffs' either would have suffered no flooding at all or only insignificant flooding that would have caused minor damages. *Id.*¹⁸

4. *The Government Intended and Foresaw the Flooding of Plaintiffs' Properties*

The flooding of Plaintiffs' properties was the intentional, or at least foreseeable, result of the Government's authorized action in releasing water from the Reservoirs. "In order for a taking to occur, it is not necessary that the government intend to invade the property owner's rights, as long as the invasion that occurred was the 'foreseeable or predictable result' of the government's actions." *Arkansas Game & Fish Comm'n v. United States*, 736 F.3d 1364, 1372 (Fed. Cir. 2013) (quoting *Moden*, 404 F.3d at 1343); *see also Ridge Line*, 346 F.3d at 1355 (taking occurs "when the government intends to invade a protected property interest or the asserted invasion is the direct, natural, or probable result of an authorized activity and not the incidental or consequential injury inflicted by the action") (quotation omitted). The result of the Government's action need not be certain, but merely the "likely result." *Moden*, 404 F.3d at 1343; *see also Caquelin*, 140 Fed. Cl. at 577 (explaining same).

In this case, the Government *intended* to flood Plaintiffs' property. The flooding of Plaintiffs' property was not merely "incidental or consequential" to the Government's action, *Ridge Line*, 346 F.3d at 1356, but was rather the specific, predicted result that the Government

¹⁸ In *St. Bernard Parish*, the Federal Circuit held that causation must be connected to the government's affirmative act. The court concluded that plaintiffs had not established that the construction and operation of the Mississippi River-Gulf Outlet ("MRGO") channel caused their injury because they failed to account for the impact of levees from a separate government flood control project. 887 F.3d at 1362-68; *cf. Ideker Farms, Inc. v. United States*, 142 Fed. Cl. 222, 226-28 (2019) (discussing *St. Bernard Parish*). Here, in contrast to *St. Bernard Parish*, Plaintiffs do not allege that the construction of the Reservoirs constituted a taking, and there are no other Government projects involved. Rather, the Government's affirmative act was the deliberate release of water from the Reservoirs onto Plaintiffs' properties, which caused the massive destruction that amounts to a taking.

intended to occur when it released water from the Reservoirs. The Corps modeled which properties would flood, down to the streets and homes within neighborhoods. SUMF ¶¶ 16-20. And the Corps continued to release water from the Reservoirs even as it saw the damage it was causing downstream. SUMF ¶ 34. Insofar as the Corps made a deliberate decision to store water on Plaintiffs' properties, rather than in the Reservoirs, the Corps intentionally flooded Plaintiffs' properties.¹⁹

At the very least, the Government also *foresaw* the damage and destruction it caused. The Corps' modeling showed that Plaintiffs' properties would be inundated with water once flows from the induced surcharge were released from the Reservoirs. That an induced surcharge of the magnitude seen from August 28, 2017 to September 14, 2017 would inundate Plaintiffs' properties was not merely foreseeable — it was foreseen. *See* SUMF ¶ 38 (including Corps' Buffalo Bayou Flow Analysis showing flows from the Reservoirs over 4,000 cfs until September 14, 2017). Numerous Government statements and documents, dating back years prior to the induced surcharge releases, make clear that the Government was aware of precisely what would happen if it released water of this magnitude from the Reservoirs. The Corps' modeling, produced long before Harvey, provided a detailed map identifying all of the areas that would be flooded, and to what extent, in circumstances similar to — though less severe than — the induced surcharge releases the Government caused in this case. SUMF ¶¶ 16-20. All of those models predicted that the Plaintiffs' properties would be substantially inundated if the Government caused flows along the Buffalo Bayou of 3,000 cfs or higher. Further, Richard

¹⁹ This Court has observed that intent “seems to correlate with authorized government action.” *Caquelin*, 140 Fed. Cl. at 576. Here, there is no question that the opening of the gates was an authorized Government action. SUMF ¶ 32 (releases authorized by Brigadier General Paul Owen).

Long, a Natural Resource Management Specialist at the Corps, conceded that the Corps knew, based on those models, which properties would flood when they opened the gates at particular flow rates. SUMF ¶¶ 16-20, 33. The Corps' flooding of Plaintiffs' property was foreseeable, it was foreseen, and it occurred exactly as predicted by the Corps' modeling.

5. *The Interference Was Severe*

The flooding of Plaintiffs' property, caused by the Government's release of water from the Reservoirs, was sufficiently severe to effectuate a taking. The severity of the Government's intrusion is a factor in determining whether such intrusion constitutes a taking. *See Arkansas Game*, 568 U.S. at 39 ("Severity of the interference figures in the calculus as well."). Catastrophic damage is not required — though that is what occurred here. Rather, it is enough "that government-induced flooding has interfered with plaintiffs' ability to use their land for its intended purposes." *Ideker Farms, Inc. v. United States*, 136 Fed. Cl. 654, 679-80 (2018) (citing *Arkansas Game*, 736 F.3d at 1375); *see also United States v. Cress*, 243 U.S. 316, 328 (1917) ("[I]t is the character of the invasion, not the amount of damage resulting from it, so long as the damage is substantial, that determines the question whether it is a taking.").

The Government's intrusion into Plaintiffs' property coopted every one of the "bundle" of rights commensurate with Plaintiffs' ownership. During the up to 12 days when the Government stored water on Plaintiffs' properties, "the interference [was] complete, *i.e.*, as severe as possible." *Caquelin*, 140 Fed. Cl. at 584. Plaintiffs were not merely unable to use their property for its intended purpose, but were unable to gain access to their land altogether. SUMF ¶¶ 43, 45.

After the water receded from Plaintiffs' properties, the taking remained severe for months because the damage from the water prevented Plaintiffs from resuming the ordinary use and enjoyment of their properties as residences and businesses. *See* SUMF ¶ 45. As in *Arkansas*

Game, the fact that the Government’s actions “deprived [Plaintiffs] of the customary use of the[ir property]” renders “the interference with the [Plaintiff]’s property . . . severe.” *Arkansas Game*, 568 U.S. at 39. Finally, the damage from the intrusion was more than “substantial.” In many instances the Government’s interference caused catastrophic damage to the first level of Plaintiffs’ homes or businesses, and destroyed much or all of the personal property contained therein. SUMF ¶ 44. Any of these effects would render the Government’s intrusion severe. Taken together, the severity of the intrusion is undeniable.

II. THE GOVERNMENT TOOK PLAINTIFFS’ PROPERTY FOR A PUBLIC PURPOSE

The Government stored water on Plaintiffs’ properties for a public purpose. The Takings Clause provides that the Government shall not appropriate private property for “public use.” The Supreme Court interprets “public use” broadly. *See Kelo v. City of New London*, 545 U.S. 469, 480 (2005) (embracing for purposes of federal law “broader and more natural interpretation of public use as ‘public purpose’ ”). The Takings Clause “does not bar government from interfering with property rights, but rather requires compensation ‘in the event of *otherwise proper interference* amounting to a taking.’” *Lingle v. Chevron U.S.A. Inc.*, 544 U.S. 528, 543 (2005) (quoting *First English Evangelical Lutheran Church of Glendale v. Los Angeles Cty.*, 482 U.S. 304, 315 (1987)). The Federal Circuit has concluded that “to constitute a taking, an invasion must [*either*] appropriate a benefit to the government at the expense of the property owner, *or* at least preempt the owner’s rights to enjoy his property for an extended period of time.” *Ridge Line*, 346 F.3d at 1356 (emphasis added).

The Government decided to release water onto Plaintiffs’ properties for at least three related public purposes: (1) to protect Downtown Houston and the Houston Ship Channel; (2) to protect other neighborhoods from flooding; and (3) to mitigate risk to Government structures.

First, the Corps acknowledged that it made induced surcharge releases “to protect against flooding in Downtown Houston and the Houston Ship Channel.” *See* SUMF ¶ 33 (including, *e.g.*, Col. Zetterstrom’s testimony that the releases were intended to “mitigate against damage flood stages for Downtown Houston and the Port of Houston”). The Reservoirs are designed to protect Downtown Houston and the Houston Ship Channel. *See* SUMF ¶ 3 (including, *e.g.*, Richard Long’s confirmation at “the operation of the [Reservoirs] were designated for the overall good of the City of Houston . . . [t]o provide flood risk management to the City of Houston” by “help[ing] [to] limit the impacts of flooding that may occur from a storm event”). The Government has asserted that releasing water was consistent with the design of the Reservoirs and their stated purpose. SUMF ¶ 34 (including, *e.g.* an August 27, 2017 Press Release from the Army Corps of Engineers asserting the Reservoirs “continue to perform as they were designed to do, which is to protect against flooding in Downtown Houston and the Houston Ship Channel.”).

Second, the Government also stored water on Plaintiffs’ properties to protect other neighborhoods from flooding. SUMF ¶ 34 (including several admissions by Colonel Zetterstrom that the releases were to prevent “uncontrolled water” having “a greater impact on . . . communities around the northern end of the dam” and that, had the gates remained closed, “water would have spilled out around the ends of the dam and gone into different neighborhoods.”).

Third, the Government made the releases to protect its structures.²⁰ SUMF ¶ 33. Colonel Zetterstrom testified that the induced “[s]urcharge [was] justified for two reasons: optimizing

²⁰ Undisputed facts show that the structures were not in fact at risk. *See* SUMF ¶ 30 (including, for example, citation to Corps memorandum noting that the Reservoirs “perform[ed] as expected with no significant problems.”). In any event, the Government cited this public purpose as one of the reasons for its action.

storage capacity and ensuring the structural stability of the dams.” *Id.* He testified further that preserving the integrity of the structures “allows additional safety to the public.” *Id.* Richard Long similarly testified that the Corps knew its actions were “making people hurt downstream,” but found that harm justified by the public benefit of “ensur[ing] the integrity of the dam and operat[ing] the reservoirs for the entire population.” *Id.*; *see also id.* (including Long’s admission that the Corps “operates its projects in a manner deliberately and carefully designed *to preserve the structure* and protect life and property”). Based solely on the Government’s actions and stated intent, there is no question that the Government acted for public use.

By storing water on their properties, the Government “preempt[ed] the [Plaintiffs’] right[s] to enjoy [their] property for an extended period of time,” and, “at the expense of the [Plaintiffs],” the Government “appropriate[d] [several] benefit[s].” *Ridge Line*, 346 F.3d at 1356. “Plaintiffs only ask that they are compensated for their loss, which helped procure those benefits.” *Alford*, 141 Fed. Cl. at 426.

III. PLAINTIFFS HAVE NOT RECEIVED JUST COMPENSATION

The Fifth Amendment directs: “[N]or shall private property be taken for public use, *without just compensation.*” U.S. Const. amend. V (emphasis added). Just compensation means “a full and perfect equivalent for the property taken.” *Monongahela Navigation Co. v. United States*, 148 U.S. 312, 326 (1893). Here, the Government stored water on Plaintiffs’ properties for the public purpose of benefiting the City of Houston and other neighborhoods, and the Government did not pay for it. Plaintiffs are entitled to just compensation.

“The guiding principle of just compensation is reimbursement to the owner for the property interest taken,” whether the fair market value of the land or the difference in value of the property based on the Government’s easement. *Alford*, 141 Fed. Cl. at 426 (quoting *United States v. Virginia Elec. & Power Co.*, 365 U.S. 624, 633 (1961)). Mortgage/foreclosure relief,

loans, or other forms of relief do not qualify as just compensation. *See id.* (“The Takings Clause of the Fifth Amendment provides just compensation as the exclusive remedy.”).²¹ In addition, some Plaintiffs have sought to repair and restore their properties to their condition prior to the Government’s interference. “The prospect of reclamation, however, does not disqualify a landowner from receipt of just compensation for a taking.” *Arkansas Game*, 568 U.S. at 40 n.2 (citing *Dickinson*, 331 U.S. at 751). By involuntarily holding the Government’s water on their properties, Plaintiffs have borne a public burden, and justice “require[s] that the burden be spread among taxpayers through the payment of compensation.” *Lingle*, 544 U.S. at 543.

CONCLUSION

The Government’s release of water from the Reservoirs during Harvey resulted in the taking of Plaintiffs’ properties without just compensation in contravention of the Fifth Amendment. The Court should grant Plaintiffs’ motion for summary judgment in its entirety. In the alternative, the Court should grant in part those portions of Plaintiffs’ motion for summary judgment that raise no genuine dispute of fact and for which Plaintiffs are entitled to judgment as a matter of law.

²¹ To the extent the Government argues (as it suggested in its Motion to Dismiss) that Congress has appropriated certain relief money for victims of Hurricane Harvey, that does not relieve the Government of the duty to pay just compensation. “Once the government’s actions have worked a taking of property, ‘no subsequent action by the government can relieve it of the duty to provide compensation for the period during which the taking was effective.’” *Arkansas Game*, 568 U.S. at 33 (quoting *First English*, 482 U.S. at 321).

Respectfully submitted this 14th day of June, 2019.

/s/ Rand P. Nolen

Rand P. Nolen

FLEMING, NOLEN & JEZ L.L.P.
2800 Post Oak Blvd., Suite 4000
Houston, Texas 77056
Telephone: (713) 621-7944
rand_nolen@fleming-law.com

/s/ Derek H. Potts

Derek H. Potts

THE POTTS LAW FIRM, LLP
3737 Buffalo Speedway, Suite 1900
Houston, Texas 77098
Telephone: (713) 963-8881
dpotts@potts-law.com

*Co-Lead Counsel for Downstream Plaintiffs as to Pre-Trial Discovery,
Dispositive Motions for Partial or Summary Judgement and/or
Cross-Motions and/or a Trial on Liability, and Scheduling*

/s/ William S. Consovoy

William S. Consovoy

CONSOVOY McCARTHY PARK, P.L.L.C.
3033 Wilson Boulevard, Suite 700
Arlington, VA 22201
Telephone: (703) 243-9423
will@consovoymccarthy.com

/s/ David C. Frederick

David C. Frederick

**KELLOGG, HANSEN, TODD,
FIGEL & FREDERICK, P.L.L.C.**
1615 M Street, N.W., Suite 400
Washington, D.C. 20036
Telephone: (202) 326-7900
dfrederick@kellogghansen.com

*Co-Lead Counsel for Downstream Plaintiffs as to Jurisdictional Discovery,
the Government's Motion to Dismiss, and Scheduling*

/s/ Jack E. McGehee

Jack E. McGehee

**MCGEHEE, CHANGE, BARNES,
LANDGRAF**
10370 Richmond Ave., Suite 1300
Houston, Texas 77042
Telephone: (713) 864-4000
jmcgehee@lawtx.com

*Of Counsel for Individual Downstream
Plaintiffs as to Jurisdictional Discovery,
the Government's Motion to Dismiss, and
Scheduling*

/s/ Richard Warren Mithoff

Richard Warren Mithoff

MITHOFF LAW FIRM
500 Dallas Street, Ste. 3450
Houston, Texas 77002
Telephone: (713) 654-1122
mithoff@mithofflaw.com

*Co-Lead Counsel for Individual Downstream
Plaintiffs as to Pre-Trial Discovery, Dispositive
Motions for Partial or Summary Judgement
and/or Cross-Motions and/or a Trial on
Liability, and Scheduling*

Certificate of Service

The undersigned attorney hereby certified that a true and correct copy of the foregoing instrument was served on the following via email on June 14, 2019.

/s/ Rand P. Nolen

KRISTINE TARDIFF
JACQUELINE C. BROWN
WILLIAM J. SHAPIRO
SARAH IZFAR
LAURA N. DUNCAN
JESSICA HELD
BRADLEY LEVINE
DANIEL W. DOOHER
DAVID DAIN,
Trial Attorneys, Natural Resources Section
United States Department of Justice
Environment & Natural Resources Division
P.O. Box 7611
Washington, D.C. 20044-7611
Tel: (202) 305-0481
Fax: (202) 305-0506
Email: Kristine.tardiff@usdoj.gov
Jacqueline.c.brown@usdoj.gov
William.Shapiro@usdoj.gov
Sarah.Izfar@usdoj.gov
Laura.Duncan@usdoj.gov
Jessica.Held@usdoj.gov
Bradley.Levine@usdoj.gov
Daniel.Dooher@usdoj.gov
David.Dain@usdoj.gov
Attorneys for the United States

Edwin Armistead "Armi" Easterby
Williams Kherkher Hart Boundas, LLP
8441 Gulf Freeway, Suite 600
Houston, Texas 77017
Telephone: (713) 230-2200
aeasterby@williamskherkher.com
*Co-Lead Counsel, Upstream Pre-Trial
Discovery and Dispositive Motions*

Charles Irvine
Irvine & Conner PLLC
4709 Austin Street
Houston, Texas 77004
713-533-1704
Charles@irvineconner.com
*Co-Lead Counsel, Upstream Pre-Trial
Discovery and Dispositive Motions*

Daniel Charest

*Co-Lead Counsel, Upstream Pre-Trial Discovery
and Dispositive Motions*

Larry Vincent

*Co-Lead Counsel for Upstream Plaintiffs as to
Jurisdictional Discovery, Motion to Dismiss and Scheduling*

Burns & Charest LLP

900 Jackson Street, Suite 500

Dallas, Texas 75202

469-904-4550

Dcharest@Burnscharest.com

lvincent@Burnscharest.com

Ian Gershengorn

Jenner & Block, LLP

1099 New York Ave NW. Suite 900

Washington, D.C. 20001

202-639-6000

ingershengorn@jenner.com

*Co-Lead Counsel for Upstream Plaintiffs as to
Jurisdictional Discovery, Motion to Dismiss, and Scheduling*

Vuk S. Vujasinovic

VB Attorneys, PLLC

6363 Woodway Dr., Suite 400

Houston, Texas 77057

713-224-7800

Vuk@vbattorneys.com

*Of Counsel for Upstream Individual Plaintiffs as to
Jurisdictional Discovery, Motion to Dismiss, and Scheduling*